REMARKS

Claims 1-15 are pending in the present Application. Claim 2 has been canceled, Claim 1 has been amended, and Claims 16 and 17 have been added, leaving Claims 1 and 3-17 for consideration upon entry of the present Amendment. A declaration under 37 CFR § 1.132 has been included to verify that the invention disclosed herein was not previously invented "by another". In addition, a terminal disclaimer under 37 § CFR 1.321 (c) and in compliance with 37 CFR § 3.73(b) has been included to disclaim patent term in excess of the term granted to U.S. Patent Nos. 7,045,176 and 7,063,805. Please amend the application as specified below.

Amendments to the Specification

The Specification has been amended on p. 15, lines 9 and 15, to change the structural variable "B" associated with Chemical Formula 6 to be "D", in both the structure of Chemical Formula 6 (on line 9) and the description of the variable (on line 15). The variable has been changed to distinguish it from the variable "B" used in conjunction with formula 1. No new matter has been introduced by this amendment.

Amendments to the Claims

Claim 1 has been amended to include the limitations of Claim 2, and the amendments to the variable "B" (now "D") for Chemical Formula 6. Support for this amendment can be found in Claims 1 and 2 as originally presented. Accordingly, Claim 2 is canceled upon entry of the present amendment.

New Claims 16 and 17 have been added with the foregoing amendments. Support for the limitations of new Claim 16 can be found in Claim 1 as originally filed, and in the Examples found in the specification as filed (where all references to the Specification as filed herein refer to the version filed as PCT application no. WO 2004/013254), on p. 14, Example 1 and Table 1. Support for new Claim 17 can be found in original Claim 1 as modified with the limitations of original Claim 3.

No new matter has been introduced by these amendments. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the

following remarks.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1, 2, and 6 stand rejected under 35 U.S.C. § 102(b) as allegedly obvious over U.S. Patent No. 4,770,503 ("Buchecker"). Applicants respectfully traverse this rejection.

Buchecker discloses alkenyl-substituted phenyl isothiocyanates of formula I (and IA, where R is -NCS), and additive compounds of formulas XXI and XXV. Col. 2, lines 13-25; Col. 8, lines 26-33; and Claims 22 and 23. Buchecker discloses compositions comprising 1-60 wt% of formula I. Col. 8, lines 30-34.

To anticipate a claim, a reference must disclose each and every element of the claim. Lewmar Marine v. Varient Inc., 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

The Examiner alleges that Buchecker discloses formula XXV which reads on Chemical Formula 6. Applicants wish to bring to the Examiner's attention that the variable "B" as disclosed for Chemical Formula 6 and as claimed in Claim 2 as originally presented is clearly defined differently from the variable "B" disclosed and claimed for Chemical Formula 1 (See re: original Claims 1 and 2), and that the indistinctness between these stemming from the choice of variable is inadvertent typographical error. Applicants apologize for the error. Accordingly, Chemical Formula 6 as it appears in amended Claim 1, and corresponding support in the specification, have each been amended to rectify this oversight. Further, as originally intended in the original claims as filed, and as made clear in light of the foregoing amendments, formula XXV does not read on the structure of Chemical Formula 6.

Buchecker fails to teach all limitations of the instant claims. Specifically, regarding the Examiner's contention that Buchecker discloses the percentages of the components of an admixture including the alkenyl-substituted phenyl isothiocyanate of formula I in Buchecker, Applicants note that the compositional range disclosed specifies only an amount of the isothiocyanate of formula I of 1 to 60 wt%. Col 8, lines 30-34. Buchecker is silent as to the amounts of any other component in the admixture, and thereby fails to disclose the recited limitation of 20 to 98 wt% of the at least one kind of liquid crystal compound claimed in amended Claim 1. Specifically, Buchecker fails to disclose an amount of formula XXI, and

does not disclose the amount claimed in amended Claim 1. Therefore, Buchecker cannot anticipate the claims as presented. Reconsideration and allowance of the claims is therefore respectfully requested.

Claims 1-3, 5, and 6 stand rejected under 35 U.S.C. § 102(e) as allegedly obvious over U.S. Patent Application Publication No. 2005/0062018 ("Ban"). Applicants note that Ban is the publication of U.S. Patent Application no. 10/493,717, which the Examiner has cited in a provisional rejection under the judicially created nonstatutory double patenting (see below). Applicants respectfully traverse this rejection.

The Examiner states that Ban is a prior art reference over the present invention due to its earlier effective U.S. filing. Accordingly, Applicants herewith include a declaration under 37 CFR 1.132 to show that any invention disclosed but not claimed in Ban was derived from the inventor(s) of the present application and is therefore not an invention "by another", and that the inventions of Ban and of the present invention as embodied in the foregoing claims are commonly assigned. Specifically, as attested to in the declaration, the subject matter over which Claims 1-3, 5, and 6 have been rejected, was invented by an inventor of the present Application, and further, both the present application and Ban are commonly assigned. Therefore, pursuant to MPEP §§ 715.01(a) and 716.10, the disclosed subject matter of Ban has thereby not been invented "by another", and Claims 1-3, 5, and 6 should be allowable to Applicant. Accordingly, reconsideration and withdrawal of the rejection, and allowance of the claims are therefore respectfully requested.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 4, 7, and 9 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Buchecker in view of U.S. Patent No. 6,221,544 ("Hayashi"). Applicants respectfully traverse this rejection.

In addition, Claims 12-15 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Buchecker in view of Hayashi, and further in view of U.S. Patent Application Publication No. 2002/0053701 ("Kong '701"; also available as U.S. Patent No. 6,590,226). Applicants respectfully traverse this rejection.

Hayashi discloses an inspecting method capable of inspecting uneven coloring of a color filter at high speed with high accuracy, and a method of manufacturing a color filter using the inspecting method. Col. 2, lines 6-11. An exemplary color liquid crystal panel is disclosed that comprises combining a color filter substrate and an opposite substrate and sealing a liquid crystal composition between these substrates. Col. 9, lines 26-30. Liquid crystal molecules are mentioned only in that they can be arranged by rubbing processing of an orientation film. Col. 9, lines 38-41. No details as to the components or proportions of the liquid crystal composition or the liquid crystal molecules are provided.

Kong '701 discloses a thin film transistor array substrate, a method of manufacturing the same, and a system for inspecting the substrate. See p. 1, paragraph [0009]. Kong '701 also discloses a liquid crystal display structure having liquid crystal material injected between two substrates. See p. 1, paragraph [0004].

The Examiner states that it would have been obvious to apply the liquid crystal mixture of Buchecker into the display device of Hayashi (See Figure 8) to provide the claimed invention. The Examiner further states that it would have been obvious to apply the liquid crystal mixture of Buchecker to the display device of Hayashi in view of Kong (See Figure 3) to provide the claimed invention. Applicants respectfully disagree with both of these assertions, and because of the similarity of the rejection, will address these in the combined remarks as follows.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Hayashi and Kong '701 each fail to disclose the amount of 20 to 98wt% of the at least one kind of liquid crystal compound claimed in instant Claim 1, from which 4, 7, and 9 (re: Hayashi) and 12-15 (re: Hayashi in view of Kong '701) all depend. Thus, Hayashi and/or Kong '701 fail to remedy the deficiency of Buchecker and disclose all elements of the instant Claims. Further, and in addition, Hayashi and/or Kong '701 fails to disclose any exemplary liquid crystal compounds, let alone the nematic liquid crystal compounds claimed in the instant claims of Chemical Formulas 1 and 6-8, and provides no teaching or motivation that would have motivated one skilled in the art to specifically apply these compounds to the display device of Hayashi and/or Kong '701 as asserted by the Examiner. Finally, no suggestion or motivation is present in Hayashi or Kong '701 that would have led one skilled in the art to combine Hayashi and/or Kong '701 with Buchecker to provide a nematic liquid crystal composition according to amended Claim 1 and its dependents. Indeed, Hayashi discloses a device only as an instructive illustration of the use of the method disclosed therein, and Kong '701 extensively discloses the structure of the thin film substrate but not the nematic liquid crystals composition, and none teaches the advantageous use of nematic liquid crystal compounds that have desirable properties of increased birefringence, or a broad nematic phase temperature while preserving compatibility with additive compounds, such properties being claimed herein in Claim 5 of the present invention. Specification, p. 10, lines 1-11. See *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d 1397, 1398 (Fed. Cir. 1989) ("Although the Commissioner suggests that [the structure in the primary art reference] could readily be modified to form the [claimed] structure, '[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification'") (citation omitted); *In re Stencel*, 828 F.2d 751, 755, 4 U.S.P.Q.2d 1071, 1073 (Fed. Cir. 1987) (obviousness cannot be established "by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion that the combination be made"). There is no teaching or suggestion to combine elements of Buchecker and Hayashi and/or Kong '701 to produce the present invention. Thus, Buchecker in view of Hayashi (or Hayashi in further view of Kong '701) fail to disclose all elements of the instant claims, fail to teach or suggest the invention, and fail to provide a

reasonable expectation that the desired features of the invention would be provided by a combination of the references. Thus, for at least these reasons, the instant claims are not unpatentable over Buchecker and Hayashi and/or Kong '701.

Claims 4-7 and 9-15 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Buchecker in view of U.S. Patent No. 6,573,964 ("Takizawa"). Applicants respectfully traverse this rejection.

Takizawa discloses a pair of substrates with a gap between, having a liquid crystal material therein containing liquid crystal molecules having negative dielectric anisotropy filled in between the substrates. Abstract. The Examiner states that it would have been obvious to apply the liquid crystal mixture of Buchecker to the display device including the domain regulating unit of Takizawa to provide the claimed invention. Applicants respectfully disagree.

Takizawa fails to disclose the amount of 20 to 98wt% of the at least one kind of liquid crystal compound claimed in instant Claim 1, from which 4-7, and 9-15 all depend. Thus, Takizawa fails to remedy the deficiency of Buchecker and disclose all elements of the instant Claims. Further, and in addition, Takizawa fails to disclose any exemplary liquid crystal compounds, let alone the nematic liquid crystal compounds claimed in the instant claims of Chemical Formulas 1 and 6-8, and provides no teaching or motivation that would have motivated one skilled in the art to specifically apply these compounds to the display device Takizawa as asserted by the Examiner. Finally, no suggestion or motivation is present in Takizawa that would have led one skilled in the art to combine Takizawa with Buchecker to provide a nematic liquid crystal composition according to amended Claim 1 and its dependents. Indeed, Takizawa extensively discloses the structure of the display device but not the nematic liquid crystals composition, and does not teach the advantageous use of nematic liquid crystal compounds that have desirable properties of increased birefringence, or a broad nematic phase temperature while preserving compatibility with additive compounds, such properties being claimed herein in Claim 5 of the present invention. Specification, p. 10, lines 1-11. There is no teaching or suggestion to combine elements of Buchecker and Takizawa to

produce the present invention. Thus, Buchecker in view of Takizawa fails to disclose all elements of the instant claims, fail to teach or suggest the invention, and fail to provide a reasonable expectation that the desired features of the invention would be provided by a combination of the references. Thus, for at least these reasons, the instant claims are not unpatentable over Buchecker in view of Takizawa.

Claims 4, 7, and 9 rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Buchecker in view of U.S. Patent Application Publication No. 2002/0113931 ("Park '931"; also U.S. Patent No. 6,970,220).

Park '931 discloses a liquid crystal display with improved contrast ratio when viewed from the sides. See p. 1, paragraph [0008]. A voltage is applied which gives a contrast ratio of greater than about 0.8. See p. 1, paragraph [0012]. The Examiner states that it would have been obvious to apply the liquid crystal mixture of Buchecker to the display device of Park '931 (See Figure 1 and Claim 1) to provide the claimed invention. Applicants respectfully disagree.

Park fails to disclose the amount of 20 to 98wt% of the at least one kind of liquid crystal compound claimed in instant Claim 1, from which 4-7, and 9-15 all depend. Thus, Park fails to remedy the deficiency of Buchecker and disclose all elements of the instant Claims. Further, and in addition, Park fails to disclose any exemplary liquid crystal compounds, let alone the nematic liquid crystal compounds claimed in the instant claims of Chemical Formulas 1 and 6-8, and provides no teaching or motivation that would have motivated one skilled in the art to specifically apply these compounds to the display device Park as asserted by the Examiner. Finally, no suggestion or motivation is present in Park that would have led one skilled in the art to combine Park with Buchecker to provide a nematic liquid crystal composition according to amended Claim 1 and its dependents. Indeed, Park extensively discloses the structure of the display device but not the nematic liquid crystals composition, and does not teach the advantageous use of nematic liquid crystal compounds that have desirable properties of increased birefringence, or a broad nematic phase temperature while preserving compatibility with additive compounds, such properties being

claimed herein in Claim 5 of the present invention. Specification, p. 10, lines 1-11. There is no teaching or suggestion to combine elements of Buchecker and Park to produce the present invention. Thus, Buchecker in view of Park fails to disclose all elements of the instant claims, fail to teach or suggest the invention, and fail to provide a reasonable expectation that the desired features of the invention would be provided by a combination of the references. Thus, for at least these reasons, the instant claims are not unpatentable over Buchecker in view of Park.

Double Patenting

Claims 1, 2, 5, and 6 are rejected the judicially created doctrine of nonstatutory obviousness type double patenting as being unpatentable over Claims 1-20, 22, and 25 of U.S. Patent No. 7,045,176.

Claims 1, 2, and 6 are also rejected the judicially created doctrine of nonstatutory obviousness type double patenting as being unpatentable over Claims 1-10 of U.S. Patent No. 7,063,805. The Examiner states that though the claims are not identical in either of the above instances, they are not patentably distinct.

A terminal disclaimer under 37 CFR 1.321 (c) and in compliance with 37 CFR 3.73(b) has therefore been included to disclaim patent term in excess of the term granted to U.S. Patent No. 7,045,176 with an issue date of May 16, 2006, and to U.S. Patent No. 7,063,805 with an issue date of June 20, 2006. Accordingly, reconsideration and withdrawal of the nonstatutory obviousness type double patenting rejections under U.S. Patent Nos. 7,045,176 and 7,063,805 and allowance of the claims is therefore respectfully requested.

Claims 1, 2, 5, and 6 stand provisionally rejected under the judicially created doctrine of nonstatutotory obviousness type double patenting as being unpatentable over Claims 1-15 of copending U.S. Patent Application No. 10/493,717 ("the '717 application"). Applicants note here and above that this Application has been published as U.S. Patent Application Publication No. 2005/0062018 ("Ban", above). The Examiner states that though the claims are not identical, they are not patentably distinct, but that the rejection is provisional because the claims have not been patented as of yet. As neither case has been issued or allowed, and

since the claims are therefore not final in both cases, it is not possible to make any determination as to double patenting or obviousness at this time. Hence, withdrawal of this rejection at least until the present claims are allowed and the '717 application has issued, is respectfully requested. MPEP § 804.01.I(B)(1).

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

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